

REMARKS

Claims 51-61 stand rejected under 35 U.S.C. §103(a) for obviousness over Pan '525 in combination with Weitek, Pan '435, Sugino et al. or Suzuki et al. Claims 51-77 stand proviosnally rejected under the judicially created doctrine of obviousness-type double patenting.

Applicants respectfully traverse the rejections and urge allowance of the present application.

Independent claim 51 defines a method of forming a transistor gate comprising, in part, forming a gate oxide layer over a semiconductive substrate, providing fluorine within the gate oxide layer, and forming a gate proximate the gate oxide layer having the fluorine therein after the providing. Claim 51 defines patentable subject matter over the prior art of record.

Page 3 of the Office Action states that Sugino discloses forming gate oxide and providing chlorine into the gate oxide followed by the gate electrode. Applicants have electronically searched the Sugino reference and have failed to uncover any teachings with respect to providing fluorine within a gate oxide layer as claimed in claim 51. Accordingly, the prior art references of record fail to teach or suggest the provision of fluorine within a gate oxide layer and thereafter forming a gate proximate the gate oxide layer having the flouring therein after the providing as positively claimed.

It follows that the teachings of the references of record do not support an obviousness rejection of the claims. An obviousness rejection

1 requires consideration of all the elements of the claimed invention.
2 Further, all such elements must be shown to be suggested by the prior
3 art when making a rejection based upon obviousness under 35 U.S.C.
4 §103(a). *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1987).
5 Positively recited limitations of claim 51 including forming a gate
6 proximate the gate oxide layer having fluorine therein are not shown or
7 suggested in the prior art. Claim 51 defines patentable subject matter
8 for at least this reason.

9 Further, and referring to MPEP §2146(j)(3), there must be some
10 suggestion or motivation, either in the references themselves or in the
11 knowledge generally available to one of ordinary skill in the art, to
12 modify or combine reference teachings. The mere fact that references
13 can be combined or modified does not render the resultant combination
14 obvious *unless the prior art also suggests the desirability of the combination*.
15 MPEP §2143.01 citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed.
16 Cir. 1990). Evidence of a suggestion to combine may flow from the
17 prior art references themselves, from the knowledge of one skilled in
18 the art, or from the nature of the problem to be solved. However, this
19 range of sources does not diminish the requirement for actual evidence.
20 Further, the showing *must be clear and particular*. See *In re Dembiczak*,
21 No. 98-1498 (Fed. Cir. 4/28/99).

22 On page three of the Office Action, it is stated that it would
23 have been obvious to one of skill in the art to provide chlorine in gate
24 oxide first followed by gate electrode because Sugino teaches process of

1 providing chlorine in gate oxide followed by gate electrode suitable
2 MOSFETs. Such fails to provide the required *clear and particular*
3 motivation. Claim 51 now defines providing fluorine in the gate oxide
4 layer. The chlorine teachings of Sugino provide no motivation or
5 suggestion to modify the Pan '525 teachings or combine the Sugino
6 teachings with the teachings of Pan'525. The obviousness rejection of
7 claim 51 is improper for at least this additional reason.

8 Claims 52-53 depend from independent claim 51 and therefore are
9 in condition for allowance for the reasons discussed above with respect
10 to the independent claim 51 as well as for their own respective features
11 which are neither shown nor suggested by the cited art.

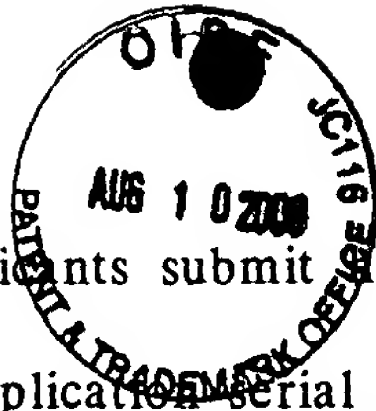
12 Independent claim 55 defines a method of forming a transistor
13 gate comprising, in part, forming a gate and a gate oxide layer, the
14 gate oxide layer having a center and outwardly exposed opposing edges
15 laterally aligned with the edges of the gate, and concentrating at least
16 one of chlorine and fluorine in the gate oxide layer having the
17 outwardly exposed opposing edges. Claim 55 defines patentable subject
18 matter over the prior art of record.

19 On page 4 of the Office Action, it is stated that the Pan '525
20 reference teaches a gate oxide layer having outwardly exposed opposing
21 edges laterally aligned with the edges of the gate, with reference to Fig.
22 1D of Pan '525. Referring to the discussion with reference to Figs. 1A-
23 1J of the Pan '525 reference, spanning from line 43, column 4 to line
24 40 of column 5, it is clear that the depicted device 10 of the Pan '525

1 reference is not subjected to any fluorine treatment during the
2 processing as shown in Fig. 1C or Fig. 1D. Fluorination processing is
3 described in lines 14-28 in column 5 of the Pan '525 patent. It is
4 depicted in subsequent processing of device 10 in Fig. 1E as changing
5 layer 18 into a fluorinated layer 18' which occurs after the processing
6 depicted in Fig. 1C and Fig. 1D. Any fluorination processing of the
7 Pan '525 patent does not occur in the gate oxide layer having the
8 outwardly exposed opposing edges. The gate oxide layer shown in Fig.
9 1E has no outwardly exposed opposing edges laterally aligned with edges
10 of the gate.

11 Applicants positively define concentrating at least one of chlorine
12 or fluorine in the gate oxide layer *having the outwardly exposed opposing*
13 *edges* in claim 55. The prior art of record fails to teach or suggest any
14 provision of chlorine or fluorine in a gate oxide having outwardly
15 exposed opposing edges as positively claimed. Applicants have identified
16 limitations not shown or suggested in the prior art of record. Claim
17 55 defines patentable subject matter over the prior art of record and
18 Applicants respectfully request such allowance in the next Action.

19 Claims 56-61 depend from independent claim 55 and therefore are
20 in condition for allowance for the reasons discussed above with respect
21 to the independent claim 55 as well as for their own respective features
22 which are neither shown nor suggested by the cited art.
23
24



Applicants submit herewith a Terminal Disclaimer with respect to pending application serial no. 09/332,255. Applicants respectfully request withdrawal of the obviousness-type double patenting rejection.

Applicants have not received an initialed PTO Form-1449 for the Information Disclosure Statement submitted on April 14, 1999. Applicants respectfully request consideration of the references disclosed on such PTO Form-1449 and forwarding of such initialed form to Applicants in the next correspondence from the Office.

Applicants respectfully request allowance of all pending claims.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

Dated: 8/4/00

By: [Signature]

James D. Shaurette
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